

TOTAL SYSTEM DEVELOPMENT

PERFORMANCE REVIEW PHASE GUIDELINES

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1. GENERAL

1.01 Before the development project is officially terminated, there should be a formal review of the operational system and of the system development effort itself.

1.02 Whenever this section is reissued, the reason(s) for reissue will be included in this paragraph.

1.03 This section is a guideline and provides expanded information in support of the concepts of Total System Development specified in Section 007-220-300*, Total System Development—Milestones.

1.04 Since a component-by-component evaluation of the system is conducted during system certification testing, the Performance Review phase represents a fairly high-level evaluation of the system. It focuses on system performance as it relates to:

- (a) Business objectives
- (b) System objectives

*Check Divisional Index 007 for availability.

- (c) System economics
- (d) User and operator attitudes
- (e) Completion agreements
- (f) Service agreements.

If these factors are being satisfied, it is reasonable to assume individual components within the system are also operating in a satisfactory manner.

1.05 More detailed performance analysis will be required if:

- (a) One or more of these primary factors are not being satisfied and the cause of the problem cannot be readily identified.
- (b) There were unresolved items at the end of certification testing that must be reevaluated during Performance Review.

1.06 The developmental effort is evaluated to determine if an operationally, economically, and technically adequate system was designed and implemented within the projected costs and on schedule.

1.07 The Performance Review should be performed after the system has settled into a normal mode of operation. Typically, the review will be held 3 to 12 months after the date of the completion agreement. The precise schedule will depend upon the type and size of system and the mode of conversion that has been selected.

1.08 If the system is to be installed in multiple locations by a central developer or an operating company, the Performance Review is usually conducted only for the *trial* location. If the trial location is in any way atypical, the second installation, or the first and second together, may be used for the Performance Review. However, the developer/maintainer must monitor system performance in

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subsequent locations in order to ascertain local variations in portability, performance, etc.

1.09 The Performance Review Phase is a one-time event. However, once the system is installed and maintenance has begun, performance monitoring at the system, subsystem, and component levels should be an ongoing activity.

2. PERFORMANCE DATA

2.01 A specific measurement technique will have to be identified for each performance characteristic selected for evaluation. If performance is to be compared to the old system, data on the existing system should have been captured during Feasibility Phase analysis or during subsequent phases of development.

2.02 With a properly designed system, many performance measurement procedures will have been built into the system as control functions. Therefore, a great amount of performance data will be available from the system itself.

2.03 Departmental or company reports, measurement plans, indexes, and/or budgets provide an excellent and available source of data for performance measurement.

2.04 General purpose measurement monitors and utilities can be used to collect Computer Subsystem (CSS) performance data.

2.05 If there is no existing measurement device, one or more of the traditional data collection techniques may be appropriate:

- (a) Interviewing
- (b) Questionnaires
- (c) Observation
- (d) Document/report analysis
- (e) Sampling.

The first three techniques will probably have to be employed in order to collect subjective data concerning attitudes, benefits, operability, quality of development effort, etc.

3. SYSTEM PERFORMANCE EVALUATION

3.01 System performance must be evaluated against the various performance criteria that were established during development. Of primary importance is whether the system has had the desired impact on the business, economically and operationally. If business objectives are not met, the value of the system, both current and projected, must be evaluated in order to form a recommendation for disposition of the system (cancel, retain, or modify through redesign or during maintenance).

3.02 The effectiveness and efficiency of the system relative to system objectives must be analyzed. Some of the factors that should be considered are:

- (a) System outputs:
 - Usability
 - Schedule
 - Quality.
- (b) System integrity:
 - Controls
 - Backup and recovery
 - Availability/reliability.
- (c) System administration:
 - Operability
 - Documentation
 - Maintainability.

If the system is not meeting its objectives, more detailed analysis may be required in order to identify specific performance problems.

3.03 The current and projected operational costs of the system must be compared with original economic estimates. If significant deviations are found, the reason for these differences should be defined as specifically as possible. A new present worth of the system should be determined so the merit of continued operation of the system can be evaluated.

3.04 These economic analyses are also important for the identification of factors or trends that

may improve the estimation accuracy of future projects.

3.05 At the conclusion of these operational and economic analyses, the review team should be able to identify specific performance deficiencies and modifications that will improve system performance.

4. USER ATTITUDE EVALUATION

4.01 It is important to evaluate user and operator attitudes concerning the system, regardless of how it is performing relative to system objectives.

4.02 Operational personnel can provide valuable information about system effectiveness and ease of use. They can define problems with procedures and documents, unforeseen problems created by the new system, and areas for system improvement.

4.03 The more subjective area of user/operator satisfaction with the system should also be investigated. Confidence, understanding, and the proper use of the system are important to the operational success of the system. If problem areas are detected, the review team should recommend possible solutions.

5. DEVELOPMENT EFFORT EVALUATION

5.01 Project success is measured primarily by system success. However, there are some specific aspects of the development effort that must be reviewed:

- (a) Operational adequacy of the system
- (b) Technical quality of the system
- (c) System development procedures
- (d) Project administration
- (e) Development costs.

While this evaluation cannot alter past events, the resultant information can be used to find better ways to conduct future project efforts.

5.02 The operational adequacy of the system is partially analyzed during this review. However, it is also important to ascertain whether the system solution or alternative that was selected for development was the correct one, ie, optimum from both a development and user standpoint.

5.03 The technical quality of the system should be measured in terms of effective utilization of state-of-the-art capabilities, overall system economics and performance, compatibility with the operational environment, maintainability, etc.

5.04 The procedures, standards, and training utilized for system development and project administration should be reviewed. Recommendations may be formed regarding ways to improve project planning, control, staffing, and the various technical methods employed for system development.

5.05 Development costs will be tracked throughout the project. If actual costs deviate significantly from original estimates, specific reasons should be identified. Typical reasons for overrun will include: poor management, improperly scoped effort, eg, too large, uncontrolled system change, poor resources requirement estimation, etc. Such problems should be documented so that more effective procedures can be developed for future use.

6. END-OF-PHASE ACTIVITIES

6.01 The complete set of Performance Review data should be analyzed, the findings summarized, and specific recommendations prepared. These Performance Review results should be submitted to project approval authorities, user approval management, and to development and maintenance management.

6.02 After review, approval personnel should indicate concurrence or disagreement with the recommendations made. They may also wish to approve specific maintenance activities or initiate implementation of specific procedural recommendations.

6.03 Project control personnel should be notified of the completion of the system development effort.

7. REFERENCES

7.01 The following sections will provide additional information relevant to the Performance Review Phase:

SECTION	TITLE
007-200-310	Functional Roles in a Systems Environment
007-208-310	Project Management
007-220-300*	Total System Development—Milestones
007-227-310	Developmental Documentation Specifications
007-230-210	System Deliverable Documentation.

*Check Divisional Index 007 for availability.